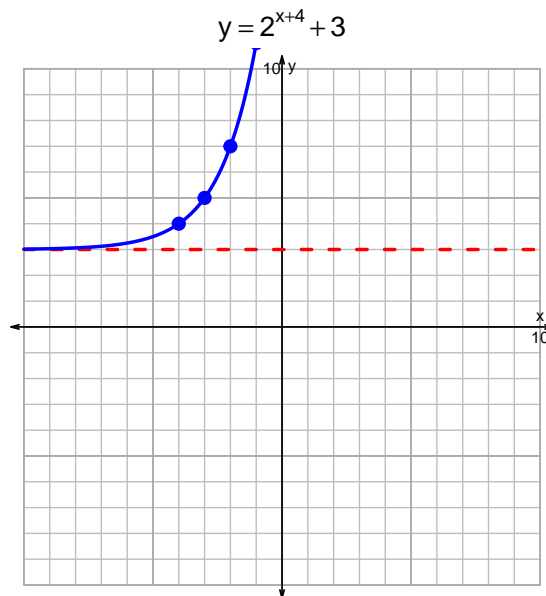
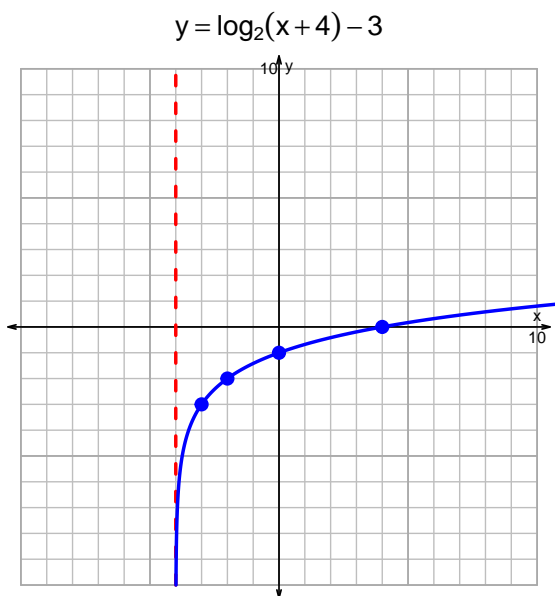


Name: _____

Date: _____

s18QUIZ: EXP LOG (SLTN v245)

- Graph $y = \log_2(x + 4) - 3$ and $y = 2^{x+4} + 3$ on the grids below. Also, draw any asymptotes with dotted lines.



- Write (but do not evaluate) the solution to the equation below by writing a logarithmic expression.

$$19 = \left(\frac{7}{5}\right) \cdot 10^{4t/3}$$

Divide both sides by $\frac{7}{5}$.

$$\frac{19 \cdot 5}{7} = 10^{4t/3}$$

Take log, base 10, of both sides.

$$\log_{10} \left(\frac{19 \cdot 5}{7} \right) = \frac{4t}{3}$$

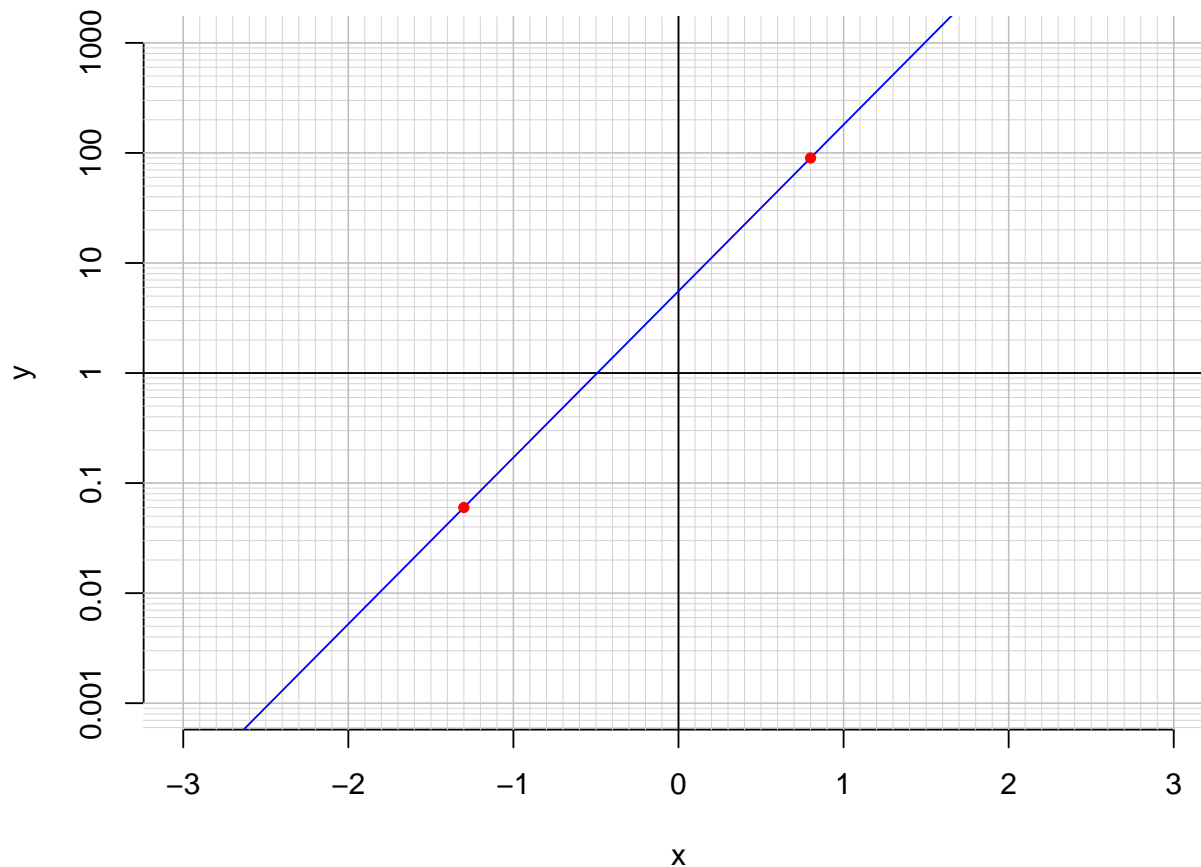
Divide both sides by $\frac{4}{3}$.

$$\frac{3}{4} \cdot \log_{10} \left(\frac{19 \cdot 5}{7} \right) = t$$

Switch sides.

$$t = \frac{3}{4} \cdot \log_{10} \left(\frac{19 \cdot 5}{7} \right)$$

3. An exponential function $f(x) = 5.55 \cdot e^{3.48x}$ is graphed below on a semi-log plot.



- a. Using the plot above, evaluate $f(-1.3)$.

$$f(-1.3) = 0.06$$

- b. Express $f^{-1}(x)$, the inverse of f .

$$f^{-1}(x) = \frac{1}{3.48} \cdot \ln\left(\frac{x}{5.55}\right)$$

- c. Using the plot above, evaluate $f^{-1}(90)$.

$$f^{-1}(90) = 0.8$$